

**The American Chestnut Foundation
Final Report to the Sustainable Forestry Initiative – 3/27/12**

Performance Measures

- (a) Establish three restoration plantings of American chestnuts in coordination with SFI-members. These plantings will be established during Spring 2010 and Spring 2011 and include approximately 3,000 of our most advanced trees (B3F3s).**

TACF's Mid-Atlantic Regional Science Coordinator Katy McCune and Southeast Regional Science Coordinator William White were responsible for overseeing this project. In 2010, the Regional Science Coordinators created a planting schedule and contacted partners to determine sites to be planted. Katy McCune conducted site visits to MeadWestvaco and Georgia Pacific in December 2010.

In 2011, TACF successfully planted 659 chestnuts at MeadWestvaco land near Rupert, West Virginia and 656 chestnuts at the Georgia Pacific mill in Big Island, Virginia. We planted in 2011 instead of 2010 because of the timing of the grant – since the plantings needed to be established in the spring. Both chestnut plantings had high (90%) survival rates. Katy will check on the plantings during spring 2012 reevaluate survival and growth rates. She will also coordinate some hand-weeding at the sites during the summer.

In 2013, we will plant 1,620 trees at MeadWestvaco at two new sites (each site will contain 625 potentially blight-resistant American chestnuts and 185 controls) and one planting of 810 chestnuts at Bridgestone in Tennessee (this planting will contain 625 potentially blight-resistant American chestnuts and 185 controls).

The information gathered from these plantings will provide TACF with critical information needed to restore the American chestnut to its historic range and will help SFI-members better integrate this information into their forest management decisions.



Chestnut seedlings at the Georgia Pacific Planting



Chestnut planted on MeadWestvaco land.

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Georgia Pacific Planting

On February 23, 2011 we planted 659 American chestnuts and controls at the Georgia Pacific mill in Big Island, VA. In April of 2011 Katy McCune followed up with monitoring the site and determined seedlings looked healthy and were beginning to leaf out, and had a low mortality rate. Wildlife started to use the area – a Killdeer nest was located onsite. During the summer, the Georgia Pacific site was weeded and cared for by employees and on July 30, 2011 they had a Boy Scout weeding party and completed weeding of most rows. On November 9, 2011, Katy McCune and a large group of volunteers measured the trees at the Georgia Pacific site. There was a 90% survival rate (please see attached excel sheet for the entire report). Considering the hot and dry summer the seedlings did better than expected. The Lynchburg Tree Stewards may help GA Pacific maintain the site in the future.



Georgia Pacific employees, TACF Staff, and TACF volunteers involved in the planting

MeadWestvaco Planting

During the fall/winter of 2010, Katy McCune and Jay Engle, operations support analyst for MeadWestvaco, developed the layout design for the planting. TACF Board Member John Scrivani helped out by developing the Random Incomplete Block Design for both the MWV and Georgia Pacific Sites. Site preparation was completed which included determining where the seedlings will be planted and numbering those locations. Katy then packed up the seedlings and transferred the trees to the site. On April 30, 2011, 656 American chestnuts and controls were planted at the MeadWestvaco site by volunteers from the West Virginia Chapter of TACF alongside partners from MeadWestvaco, SFI, Glenville State College forestry students, WV Division of Forestry, Meadow River Watershed Association, and the WV SFI State Implementation Committee. Katy visited



MeadWestvaco employees, TACF Staff, and TACF volunteers helped plant chestnuts near Rupert, West Virginia

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MeadWestvaco in June of 2011 to verify which trees had been planted and made some corrections to the data originally recorded. The site had high survival rates (please see attached excel sheet for the entire report).

(b) Develop a web-based database to allow SFI-member cooperators to enter the data they collect from their restoration plantings. This database will allow SFI-member cooperators the opportunity to evaluate their plantings, along with others stored within this database.

TACF successfully completed Phase 1 of the Trees Database project. TACF's Regional Science Coordinator Sara Fitzsimmons was the project leader who worked closely with TACF's Northeast Regional Science Coordinator Kendra Gurney and two TACF Board Members and volunteers Jack Ostroff and Bill Adamsen to complete the project. The Trees Database is an online relational database that will enable TACF to capture the tremendous amount of information we collect from chestnut plantings.

The first step in this project was to define the limits and scope of the database. In August of 2009 a database taskforce was created consisting of diverse users including staff and several very knowledgeable volunteers and began to develop the initial design. In fall of 2010 TACF sent out an RFP and interviewed 5 developers. TACF chose database developer Hotel Delta in February 2011. Weekly meetings with Hotel Delta and TACF's database taskforce began on March 1, 2011 and continued throughout the course of this project. In spring of 2011, they worked on the design and structure of the database, determined hierarchy and basic log-in functions and worked on a map-based system to keep track of plantings. By the summer of 2011, a good prototype was online and running, but it still needed to be cleaned up. A security model was developed that will give users different levels of access and will protect personal information. Traits and observations, as well as a planting module and crosses were also completed.

In fall of 2011, the database was moved to a production server from a testing server [testing server: <http://taf.hoteldelta.net/> and production server: <http://acf.heroku.com/>]. We've completed Phase 1 of development and are ready to move on to Phase 2. Everything works to input plantings and to track plantings. We are currently improving the mapping efficacy and usability. The next phase of development will entail making the planting information more accessible and intuitive. Funding for Phase 2 of database development will be provided by a Conservation Innovation Grant received by TACF this year.

(c) Develop and print a Best Management Practices guidelines for growing and managing American chestnuts for use by SFI-member cooperators and family forest landowners.

With SFI's support, TACF created a Best Management Practices manual for American chestnut restoration. It was completed in fall of 2011 and uploaded onto the TACF website (http://www.acf.org/pdfs/resources/GrowingChestnuts_BMP.pdf). TACF's Regional Science Coordinators Sara Fitzsimmons and Kendra Gurney worked together to produce this manual. Kip Adams of the Quality Deer Management Association contributed a written submission that was included in the manual: "Deer Management to Enhance Planting Success." Tracey Coulter from the Pennsylvania Department of Conservation and Natural Resources also contributed information for the section on

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woodlot management. TACF and SFI sent out press releases announcing its publication. The Best Management Practices manual is a great how-to for planting chestnuts and is proving to be a very useful tool. It is already being used by landowners and partner organizations to assist them in planting chestnuts. Please see the completed manual that was submitted with this report.

Planting and Growing Chestnuts

Best Management Practices for Reintroducing Chestnut to Your Property



Planting and growing chestnut trees is a rewarding challenge. As with growing anything, there are some “rules of the road” that will help with the successful establishment and growth of your chestnut trees.

The American Chestnut Foundation (TACF) is working to restore the American chestnut (*Castanea dentata*) to its original range. To do this, we must plant a lot of trees! To date, we have planted over 100,000 trees as part of our mission.

Restoring the American chestnut to its native hardwood forests is not a single event, but a process that will take generations to complete. Along the way, a blight-resistant American chestnut will face the same challenges that today limit regeneration for many species in the eastern hardwood forests. Key among these challenges is competition with other plants, dispersal, and wildlife predation. What we understand about these challenges and how the chestnut grows in response to them is vital to restoring this keystone species.

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If you plan to join our efforts, please take a few minutes to review the following information so that you might get the most out of your chestnut planting. We hope that by following the recommendations contained within you will realize the germination and growth potential of your new chestnut trees, and in turn, improve the value of your property.

www.acf.org

www.sifprogram.org



I. THE RESTORATION PROGRAM OF TACF

As stated above, the goal of TACF is to restore the American chestnut to its original range. TACF works towards this goal with a program that includes breeding, testing, and reintroduction.

There are several efforts underway to restore the American chestnut involving traditional breeding methods, simple conservation strategies, methods that would reduce the virulence of the blight fungus, as well as modern gene-transformation techniques.

While TACF dabbles in each method, we focus primarily on classical breeding techniques, most specifically backcross breeding. While the broadest goal is to restore the American chestnut species, the organization focuses on two major objectives: (1) introducing the genetic material responsible for the blight resistance of Asiatic species into the American chestnut, and (2) preserving the genetic heritage of the American chestnut species by a) planting and grafting native gremplasm before it disappears and b) incorporating that material into our breeding program.

By developing a minimum of six breeding generations, along with other techniques, TACF hopes to create a blight-resistant American chestnut. In 2008, the first members of our sixth generation cross were established in forested plots with the USDA Forest Service as part of the testing and reintroduction portion of TACF's restoration plan.

TACF plans to test these initial breeding lines for approximately 10-15 years, looking closely at growth, morphology, and blight resistance. If this material passes that extensive testing, wide-scale distribution and planting of material should follow.

But TACF can't stop with the first material developed through our breeding efforts. Volunteer growers continue to plant testing, conservation, breeding, and

Final Financial Report

Project Budget Actuals	SFI	TACF	In-Kind	Total
B3F3 Seedlings: 3,000 @ \$250 each. The costs of seedlings are an in-kind contribution. Their value is derived from costs that have been accumulated over the 30 years it has taken TACF to develop them.	0	0	750,000	750,000
Planting material (fences, etc.) These supplies were provided by our partners at MeadWestvaco, Georgia Pacific, and Bridgestone.	0	0	10,000	0
Database Development	60,000	10,419	0	70,419
Regional Science Coordinator staff time for plantings, database development, and BMP Manual	0	7,110	0	7,110
Total	60,000	17,529	760,000	827,529